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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,274	06/27/2003	Leonid Krasny	P18034-US1	8358

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ERICSSON INC.
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EXAMINER

VO, DON NGUYEN

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.		Applicant(s)	
	10/608,274		KRASNY ET AL.	
	Examiner		Art Unit	
	DON N. VO		2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgment

1. This Office Action is responsive to the Amendment filed on 12/5/2006.

Claim Objections

2. Claim 3 is objected to because of the "claim I" recited at line 1. It is suggested to change to -- claim 1 --.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 9-14, 19-23, and 26-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Yu et al (US 2004/0076239).

Regarding claims 1, 2, 9-14, 19-23, and 26-28, Yu, as shown in figure 1, teaches a receiver comprising a channel estimator (21) to determine an initial channel estimate and the initial channel estimate is updated or modified (biased)

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(23, 24, 26) to be used for demodulating (22, 25, 27-29). See also paragraphs [0027] – [0032].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3-8, 15-18, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al (US 2004/0076239) in view of Magee (US 2003/0076904).

Regarding claims 3-8, 15-18, 24 and 25, Yu teaches all subject matter claimed except for further teaching the steps of transforming, performing and inverse transforming in order to provide the biased to the initial channel estimate.

However, Magee, from the same field of endeavor and as shown in figures 9-11, teaches a method and apparatus for calculating the scaled channel estimate by transforming (FFT), performing (126) and inverse transforming (IFFT). See also paragraphs [0055] – [0068]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the receiver of Yu et al by employing the teaching of Magee since it is just an alternative way of calculating the channel estimate.

Response to Arguments

8. Applicant's arguments filed 12/5/2006 have been fully considered but they are not persuasive.

In the Remarks (page 8 of the response), applicant traverses to the rejections by mainly arguing that the cited reference Yu (US 2004/0076239) fails to teach, as recited in one of the independent claims 1, 11, 13, 21, 23, and 28:

“a) the use of training symbols to determine an initial channel estimate,
b) applying bias to the initial channel estimate to obtain a biased channel estimate, and
c) reducing an error in an estimated channel response compared to the initial channel estimate.”

The examiner is respectfully not agreed. First, the examiner would like to point out that claims 1, 13, and 23 do not recite the limitation of “c) reducing an error in an estimated channel response compared to the initial channel estimate.”

Only claims 11 and 21 recite such limitation. However, reference Yu teaches all of three limitations (a) – (c) as argued. Re limitation (a), Yu teaches the channel estimator (21) to calculate initial channel estimation using the preamble (training symbols) (see figure 1 and lines 3-4 of paragraph [0027]). Re limitation (b), Yu teaches the initial channel estimate outputted from the channel estimator (21) being updated or modified (applying bias) by channel estimate updater (23) using the information from the updating constant calculator (24) and the average pilot phase calculator (26) (see figure 1 and lines 4-17 of paragraph [0027]). Re limitation (c), as a result of updating or modifying the initial channel estimate from the channel estimator (21) by the channel estimate updater (23), a more accurate channel estimate than the initial channel estimate will be obtained at the output of the channel estimate updater (23) so that the received signal will be more accurately detected at the receiving end.

Based on the above rationale, it is believed that the reference Yu meets the claimed limitations and therefor, the rejections are still maintained.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References Gothe et al (US 6,269,131) and van de Beek et al (US 6,628,926) are cited because they are pertinent to the channel estimation method and apparatus.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DON N. VO whose telephone number is (571) 272-3018. The examiner can normally be reached on MON - FRI (9:00-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAY PATEL can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



DON N. VO
Primary Examiner
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